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ROSHKA HEYMAN & DEWULF

RECEIVED

ROSHKA HEYMAN & DEWULF, PLC
ATTORNEYS AT LAW
ONE ARIZONA CENTER
400 EAST VAN BUREN STREET
SUITE 800
PHOENIX, ARIZONA 85004
TELEPHONE NO 602-256-6100
FACSIMILE 602-256-6800

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AZ CORP COMMISSION
DOCUMENT CONTROL

July 29, 2005

Docket Control
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

RE: Docket No. E-00000A-99-0431 – Distributed Generation Workshop

Dear Sir/Madam:

On July 8, 2005, at the Distributed Generation Workshop, participants were requested to provide comments regarding Distributed Generation interconnection rules or procedures.

Tucson Electric Power Company ("TEP"), UNS Electric, Inc., and UNS Gas, Inc. (collectively "UNS") believe that the 1999 "Arizona State Draft Interconnection Standards for Distributed Generation" ("AZ Draft Standards"), that are referenced in the Meeting Minutes of the July 8, 2005 Distributed Generation Workshop, provide a sound starting point for interconnection rules and procedures.

Attached hereto is a copy of "Tucson Electric Power Co. Interconnection Requirements for Distributed Generation." This document reflects the position of TEP and UNS on many issues relevant to the Commission's development of Distributed Generation interconnection rules and procedures. An additional area that TEP and UNS believe should be addressed in future workshops is Renewable Energy sources and rules or procedures for their interconnection to electric systems.

Representatives of TEP and UNS intend to participate in the August 26, 2005 workshop and will be prepared to further discuss the Tucson Electric Power Co. Interconnection Requirements for Distributed Generation document and the Renewable Energy sources issues.

Please do not hesitate to contact me if there are any questions regarding these comments.

Sincerely,

Raymond S. Heyman
For the Firm

RSH:mi
cc: Erinn Andreasen, via e-mail
Lori Miller, via e-mail
Steve Glaser

ATTACHMENT

Tucson Electric Power Co.

Interconnection Requirements

For

Distributed Generation

TABLE OF CONTENTS

1. SCOPE

This document specifies Tucson Electric Power Company (TEP, or "utility") requirements for safe and effective interconnection of a Distributed Generator with a utility radial distribution system. Interconnection requirements as outlined here are for those installations that will be connected to TEP's electric power distribution and/or transmission systems. A Distributed Generator must also comply with WSCC (Western Systems Coordinating Council), ACC (Arizona Corporation Commission), AZISA (Arizona Independent Scheduling Administrator), NERC (North American Electric Reliability Council), FERC (Federal Energy Regulatory Commission) and RTO (Regional Transmission Operator) requirements as applicable. Facilities that will be connected directly to the transmission system will be reviewed by the utility on an individual basis.

This Agreement does not provide for nor include transmission service. The availability of transmission service on the transmission system may not be inferred or implied from TEP's execution of this Agreement. Transmission service on the transmission system is available pursuant to the TEP OATT.

For the purpose of simplicity, the term "Customer" will be used here to refer to a utility customer who installs, owns or operates a distributed generator, cogenerator or small power producer, even though the Customer may not actually be a purchaser of power from the utility, and includes any independent party or entity that either invests in, owns or operates a distributed generator or generation facility.

The required protective relaying and/or safety devices and requirements specified in this document are for protecting utility facilities and other utility customers' equipment from damage or disruptions caused by a fault, malfunction or improper operation of the distributed generating facility. They are also necessary to ensure the safety of utility workers and the public. The requirements specified herein do not include additional relaying, protective or safety devices as may be required by industry and/or government codes and standards, equipment manufacturer requirements and prudent engineering design and practice to fully protect Customer's generating facility or facilities; those are the sole responsibility of the Customer. In addition to all applicable regulatory, technical, safety, and electrical requirements and codes, Customers will also be subject to contractual and other legal requirements, which will govern over the general provisions in this document.

Customers and utility personnel shall use this document when planning the installation of distributed generation to be connected to or expecting back-up electrical service from TEP. Note that these requirements may not cover all details in specific cases. TEP encourages the Customer to discuss project plans with the utility before designing their facility or purchasing and installing equipment. This document must be applied in conjunction with applicable utility rate tariffs and electrical service schedules and requirements that pertain to the operation of distributed generation with the utility electrical distribution system.

2. DEFINITIONS

2.1 Clearance Point: A clearance point is the physical location on a piece of line or equipment that is to be de-energized from all known sources of power and tagged. Further, that piece of line or equipment shall remain in the condition stated until released by the person having the clearance.

2.2 Cogeneration Facility: Any facility that sequentially produces electricity, steam or forms of useful energy (e.g., heat) from the same fuel source and which are used for industrial, commercial, heating, or cooling purposes.

2.3 Customer: Any utility customer who installs, owns or operates a GF, even though the customer may not actually be a purchaser of power from the utility, and includes any independent party that either invests in, owns or operates a distributed generator or generating facility.

2.4 DG Service Disconnect: Visible gang operated load break disconnect switch(s) or breaker(s), capable of being locked in a visibly "open" position by a standard TEP padlock that will completely isolate the GF from the TEP system. Customer's disconnect switch(s) or breaker(s) shall be clearly labeled with permanent letters 1" high stating "DG Service Disconnect".

2.5 Distributed Generator: Any type of electrical generator or static inverter producing alternating current that (a) has the capability of parallel operation with the utility distribution system, or (b) is designed to operate separately from the utility system and can feed a load that can also be fed by the utility electrical system. A distributed generator is sometimes referred to simply as "generator".

2.6 Electric Supply/Purchase Agreement: An agreement, together with appendices, signed between the utility and the Customer (Generating Facility) covering the terms and conditions under which electrical power is supplied and/or purchased to/from the utility.

2.7 ESP (Electric Service Provider): A company supplying, marketing or brokering at retail any competitive services pursuant to a Certificate of Convenience and Necessity.

2.8 Generating Facility (GF): All or part of the Customer's distributed electrical generator(s) or inverter(s) together with all protective, safety, and associated equipment necessary to produce electric power at the Customer's facility. A GF also includes any Qualifying Facility (QF).

2.9 Hold For Orders: The method used as an aid in protection of personnel working on or near energized equipment, whereby automatic or remote re-closing of a line is disabled. When a hold tag (see Exhibit 4) is in effect, if the circuit trips open, it will not be re-closed until the system operator receives a release from the person to whom the hold was issued. As it relates to distributed generation, circuits with hold tags shall have all potential sources of backfeed removed by opening, locking and tagging the appropriate disconnect switch.

2.10 Interconnect Agreement: An agreement, together with appendices, signed between the utility and the Customer (Generating Facility) covering the terms and conditions governing the interconnection and operation of the Generating Facility with the utility.

2.11 Islanding: A condition occurring when a generator and a portion of the utility system separate from the remainder of the utility system and continue to operate in an energized state (copyright EPRI).

2.12 Metering Service: All functions related to measuring electricity consumption.

2.13 MSP (Meter Service Provider): An entity providing Metering Service, as that term is defined herein.

2.14 Network System: An electrical system that can be fed simultaneously from multiple sources.

2.15 Parallel Operation: The operation of a GF that is electrically interconnected to a bus common with the utility electrical system, either on a momentary or continuous basis.

2.16 Points of Interconnection: The physical location where the utility's service conductors are connected to the Customer's service conductors, at which point the power transfer occurs between the Customer's electrical system and the utility distribution system, also commonly referred to as the Point of Common Coupling.

2.17 Qualifying Facility (QF): Any Cogeneration or Small Power Production Facility that meets the criteria for size, fuel use, efficiency, and ownership as promulgated in 18 CFR, Chapter I, Part 292, Subpart B of the Federal Energy Regulatory Commission's Regulations.

2.18 Relay: An electric device that is designed to interpret input conditions in a prescribed manner and after specified conditions are met to respond to cause contact operation or similar abrupt change in associated electric control circuits.

2.19 Small Power Production Facility: A facility that uses primarily biomass, waste or renewable resources, including wind, solar, and water to produce electric power.

2.20 Transfer Trip Scheme: A form of remote trip in which a communication channel is used to transmit a trip signal from the relay location to a remote location.

2.21 Utility: The electric utility entity (TEP) that constructs, operates and maintains the electrical distribution system for the receipt and/or delivery of power, also referred to as the Utility Distribution Company (UDC).

2.22 Utility Grade Relays: Relays specifically designed to protect and control electric power apparatus, tested in accordance with the following ANSI/IEEE standards:

(a) ANSI/IEEE C37.90-1989 (R1994), IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus.
(b) ANSI/IEEE C37.9.01-1989 (R1994), IEEE Standard Surge Withstand (SWC) Tests for Protective Relays and Relay Systems.
(c) ANSI/IEEE C37.90.2-1995, IEEE Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers.

3. OVERVIEW OF DISTRIBUTED GENERATION ISSUES

Any Customer may operate its generating equipment in parallel with TEP provided the Customer installs equipment that will:

(a) not present any hazards to the utility personnel, other customers or the public,

(b) minimize the possibility of damage to the utility or other customer equipment,
(c) not adversely affect the quality of service to other customers, and
(d) not hamper efforts to restore a feeder to service (specifically when a clearance or hold tag is required).

In addition, the Customer must:

(a) install its generating facility to meet all the interconnection, safety, and protection requirements outlined in this document,
(b) enter into an Interconnect Agreement with TEP and, if applicable, an Electric Supply/Purchase Agreement and
(c) comply with all applicable service schedules and requirements, pricing plans, tariffs, Rules and Regulations, and any other applicable requirements approved by the Arizona Corporation Commission.

The protective and safety devices (relays, circuit breakers, disconnect switches, communication channels etc.) specified in this document must be installed and placed into service before allowing parallel operation of Customer's generation facilities with TEP's system. The purpose of these devices is to isolate the Customer's generating equipment from the utility system whenever faults or disturbances occur and for maintenance purposes. Modifications to TEP's electrical system configuration or protective equipment may also be required, at the expense of the Customer, in order to accommodate parallel generation. Additional agreements may be required between the Customer and the utility before modifications to the distribution system are made.

The utility will not assume any responsibility for the protection of the Customer's generator(s), or of any other portion of the Customer's electrical equipment. The Customer is fully and solely responsible for protecting his equipment in a manner to prevent any faults or other disturbances on the utility distribution system from damaging the Customer's equipment.

The Customer must obtain all required permits.

4. DISTRIBUTED GENERATION TYPES

Distributed generation is any type of electrical generator or static inverter producing alternating current that (a) has the capability of parallel operation with the utility distribution system, or (b) is designed to operate separately from the utility system and can feed a load that can also be fed by the utility electrical system. A distributed generator is sometimes referred to simply as "generator".

Distributed generators include induction and synchronous electrical generators as well as any type of electrical inverter capable of producing A/C power. A Separate System, or Emergency or Standby Generation System, is designed so as to never electrically interconnect or operate in electrical parallel with the utility system. A Parallel System, or Interconnected Generation System, is any generator or generation system that can parallel, or has the potential to be paralleled via design or normal operator control, either momentarily or on a continuous basis, with the utility system.

The Customer may elect to run his generator as a separate system with non-parallel load transfer between the two independent power systems, or he may run it in parallel with the utility system. A description and the basic requirements for these two methods of operation are outlined below.

4.1 Separate System

A separate system is one in which there is no possibility of electrically connecting or operating the Customer's generation in parallel with the utility's system. The Customer's equipment must transfer load between the two power systems in an open transition or non-parallel mode.
Emergency or Standby generators, used to supply part or all of the Customer's load during a utility power outage, are required by the National Electrical Code (NEC) to have transfer equipment designed and installed to prevent the inadvertent interconnection of normal and emergency sources of supply in any operation of the transfer equipment.

These generators must be connected to the Customer's wiring through a double throw, "break-before-make" transfer switch specifically designed and installed for that purpose. The transfer switch must be of a fail-safe mechanical throw-over design, which will under no circumstances allow the generator to electrically interconnect or parallel with the utility system. The transfer switch must always disconnect the Customer's load from the utility power system prior to connecting it to the generator. Conversely, the transfer switch must also disconnect the load from the generator prior to re-connecting it back to the utility system. These requirements apply to both actual emergency operations as well as generator testing. All transfer switches and transfer schemes must be inspected and approved by the jurisdictional electrical inspection agency.

Portable generators are not designed for connection to a building's permanent wiring system, and are not to be connected to any such wiring unless a permanent and approved transfer switch is used. Failure to use a transfer switch can result in backfeed into the utility system – the generator voltage can backfeed through the utility transformer and be stepped up to a very high voltage, which poses a potentially fatal shock hazard to anyone working on the power lines or on utility equipment.

4.2 Parallel System

A parallel, or interconnected, generator is connected to a bus common with TEP's system, which may result in a transfer of power between the two systems. In interconnected operations a Customer's generator becomes an integral part of the utility system that must be considered in the electrical protection and operation of the utility system.

Parallel generators encompass any type of distributed generator or generating facility that can electrically parallel with, or potentially backfeed TEP's system. Additionally, any generator system using a "closed transition" type transfer switch or a multi-breaker transfer scheme, or an electrical inverter that can be configured or programmed to operate in a "utility interactive mode" constitutes a potential backfeed source to the utility system, and is classified as an interconnected generator.

For a Customer to interconnect its generator to TEP's system, specific interconnection and contractual requirements must be met, and information must be submitted for all interconnected generators as is specified in the various sections of this document. Requirements include a DG Service Disconnect, as well as protective relaying, metering, communication links, and other

safety and information requirements. TEP personnel will inspect the system, and TEP reserves the right to witness testing of these protective schemes. The Customer must enter into an Interconnection Agreement and, as applicable, an Electric Supply/Purchase Agreement with the utility. TEP approval is not extended to any specific type of generator or generator scheme since each project is site specific and needs to be reviewed on a case-by-case basis.

In addition to the various other requirements specified in this document, Parallel Systems shall specifically comply with the technical requirements outlined in the Interconnection Technical Requirements section (Section 7) of this document.

5. GENERAL INFORMATION & REQUIREMENTS

The Customer is financially responsible for all facilities required to be installed solely to interconnect the Customer's generation facility to the utility system. This includes connection, transformation, switching, protective relaying, metering and safety equipment, including a visible open DG Service Disconnect switch and any other requirements as outlined in this document or other special items specified by TEP. All such Customer facilities are to be installed by the Customer at the Customer's sole expense. In the event that additional TEP facilities are required to be installed to accommodate the Customer's generation, TEP will install such facilities at the Customer's expense. TEP shall also charge the Customer for any administrative costs and/or the costs of studies required to interconnect the Customer's generation facilities. Studies may include but are not limited to:

(a) review of grounding adequacy
(b) fault current calculation and protective relay settings
(c) interaction of customer's generating facility with TEP's system

The Customer will own and be responsible for designing, installing, operating and maintaining:

(a) The generating facility in accordance with the requirements of all-applicable electric codes, laws and governmental agencies having jurisdiction. This includes, but is not limited to:

- UL 1741 – Inverters
- UL 1703 - PV Panels
- UL 2200 – Microturbines
- IEC 61400 – Wind Turbines
- UL 1008 – Transfer Switches
- IEEE 519 – Harmonics
- IEEE 1547 – Distributed Resources/Utility Interconnection (**presently not available**)
- NEC Article 250 – Grounding
- NEC Article 445 – Generators
- NEC Article 690 - Solar Photovoltaic Systems
- NEC Article 700 – Emergency Systems
- NEC Article 702 – Optional Standby Systems

(b) Any control and protective devices, in addition to protective relays and devices specified in this document, to protect its facilities from abnormal operating conditions, including but not limited to, electric overloading, abnormal voltages, and fault currents.

(c) Interconnection facilities on the Customer's premises as may be required to deliver power from the Customer's generating facility to the utility system at the Point of Interconnection.

5.1 Insurance

Customers interconnecting a generator with TEP shall be required to maintain public liability and property damage insurance. Insurance requirements are outlined in the Interconnection Agreement between TEP and the Customer.

5.2 Interconnect Agreement

All interconnected Customers are required to sign, in addition to any other special agreements as may be applicable, an Interconnect Agreement with the utility.

5.3 Electric Supply/Purchase Agreement

Customers purchasing energy from either TEP or an ESP, utilizing an interconnected DG system, may be required to sign an agreement for backup, supplemental and maintenance power from their energy supplier.

Customers operating a parallel generator may also be required to sign an agreement or take service under a tariff with TEP that provides for movement of power over TEP's distribution grid and transmission systems.

The Customer may sell power to TEP, other utilities, ESPs, or electric wholesalers. These entities may or may not be obligated to purchase this power and any such sales would be made under the terms and conditions offered by the purchaser. For a Customer who wishes to sell power to others, the customer will be required to:

(a) Choose the applicable TEP tariff that allows for the movement of power over TEP's distribution grid and transmission systems;

(b) Sign an agreement with the purchaser of the electric power, and/or

(c) Become an ESP and sell power to retail customers.

(d) Follow all applicable criteria/protocols established by NERC, WSCC, the approved RTO, and AZISA regarding the sale of power to others.

All tariffs under the purchase and supply arrangements are subject to change by the utility and approval of the ACC.

5.4 Interconnections

TEP will not install or maintain any lines or equipment on a Customer's side of the Point of Interconnection, except that TEP may install its meter and/or research equipment. Only TEP authorized employees may make and energize the service connection between the utility system and the Customer's service entrance conductors.

Normally, the interconnection will be arranged to accept only one type of standard service at one Point of Interconnection. If a Customer's generating facility requires a special type of service, or

if sales to TEP will be at a different voltage level, the services will only be provided according to additional specific terms that are outlined in the Electric Supply/Purchase Agreement, applicable service schedules, or other terms and conditions governing the service.

5.5 Easements and Rights of Way

Where an easement or right of way is required to accommodate the interconnection, the Customer shall be required to provide, or obtain from others and provide, suitable easements or rights of way, in TEP's name.

5.6 Meter Installations

TEP has metering requirements for a GF that may depend on the pricing plan selected and service requirements of the Customer. The Customer shall contact the utility, or its ESP or MSP if applicable, for design requirements and installation details.

6. DESIGN CONSIDERATIONS AND DEFINITION OF CLASSES

Protection requirements are influenced by the size and characteristics of the parallel generator along with the nature and operational characteristics of the associated utility system. Therefore, similar units connected to different lines could have different protection requirements based on varying load conditions, as well as on the specific utility feeder and transformer characteristics.

6.1 Synchronous Units

Synchronous generators are generally capable of supplying sustained current for faults on TEP's system. These units can also supply isolated utility load providing the load is within the units' output capability, and must be prevented from energizing a de-energized utility line.

The utility will specify the maximum allowable protective relay time settings for a particular proposed distributed generator installation. The Customer is responsible for ensuring generator separation prior to utility circuit re-energization to prevent out-of-sync paralleling.

6.2 Induction Units

Induction generators are basically induction motors that are mechanically driven above synchronous speed to produce electric power. These units do not have a separate excitation system and, as such, require that their output terminals be energized with AC voltage and supplied with reactive power to develop the magnetic flux. Induction generators are therefore normally not capable of supplying sustained fault current into faults on the utility system. Such units are generally not capable of supplying isolated load when separated from the utility system; however, it is possible for an induction generator to become self-excited if a sufficient amount of capacitance exists at its output terminals. Under conditions of self-excitation, an induction generator will be capable of supplying isolated load, providing the load is within the units' output capability. In most cases when self-excitation occurs it will be accompanied by a sudden increase in terminal voltage. The utility and its other customers must be protected from out-of-sync closing and over-voltages that can occur whenever an induction generator becomes self-excited. Induction units shall therefore be designed to automatically separate from the utility system upon loss of utility voltage and prior to reclosing of the utility feeder.

6.3 Static Inverters

Static inverters convert DC power to AC by means of electronic switching. Switching can be controlled by the AC voltage of the utility's supply system (line-commutated) or by internal electronic circuitry (forced-commutated). Line-commutated inverters are generally not capable of operating independently of the utility's AC supply system and, as such, cannot supply fault current or isolated loads under normal conditions. Forced-commutated, or self-commutated, inverters are capable of supplying fault current and load independently of the AC supply system. Any forced-commutated inverter that is to be interconnected with the utility must be specifically designed for that purpose, i.e. it must be designed to accommodate parallel interfacing and operation. Static inverters must be designed to automatically separate from the utility system upon loss of utility voltage and prior to reclosing of the utility feeder.

6.4 Definition of Generator Size Classes

The following generator size classifications are used in determining specific minimum protective requirements for distributed generation facilities. Specified ratings are for each connection to the utility system. Customers must satisfy, in addition to the general requirements specified in this document, the minimum relaying requirements given in this document for each generator class.

(a)	Class I	50 kW or less, single or three phase
(b)	Class II	51 kW to 300 kW, three phase
(c)	Class III	301 kW to 5,000 kW, three phase
(d)	Class IV	over 5,000 kW, three phase

7. INTERCONNECTION TECHNICAL REQUIREMENTS

The requirements and specifications outlined in this section are applicable to distributed generation interconnected for parallel operation with the utility distribution system, unless otherwise specified. The protection and safety devices and other requirements specified in the following sections are intended to provide protection for the utility system, utility workers, other utility customers and the general public. They are not imposed to provide protection for the Customer's generation equipment or personnel; this is the sole responsibility of the Customer.

With respect to the above protection objectives, it is necessary to disconnect the parallel generator when trouble occurs. This is to:

(a) ensure if a fault on the utility system persists, the fault current supplied by the Customer's generator is interrupted;
(b) prevent the possibility of reclosing into an out-of-synch isolated system composed of the utility distribution system, or a section thereof, and the Customer's generator; and
(c) prevent reclosing into the Customer's generation system that may be out of synchronization or stalled.

The protection requirements are minimal for smaller installations, but increase as the size of the Customer's generation increases. Small installations usually ensure that, for any fault on the utility system, utility protective devices will operate and normally isolate the generation with a large amount of load, causing under-voltage automatic shutdown of the generator. For larger installations the probability of isolated operation is higher since the available generation may be sufficient to carry the entire load, or

part thereof, of the local utility circuit. In instances where the utility system arrangement is such that it is possible that the generators will not always be isolated with comparatively large amounts of load, additional protection (including a transfer trip scheme) and generator shutdown schemes are required.

TEP applies automatic reclosing to overhead distribution and transmission circuits. When the utility source breaker trips, the Customer must ensure that his generator is disconnected from the utility circuit prior to automatic reclosure. TEP applies instantaneous reclosing at the substation, in which the distribution circuit can be re-energized in less than 20cycles (333 msec) after a protective relay trip. In order to assure reliable service to other TEP customers, the Customer's generator shall be disconnected from the utility's system within 5 cycles (83.3 msec) of a utility initiated protective relay trip. Inability of the Customers equipment to meet these time constraints may require the Customer to install a transfer trip scheme. In addition, automatic reclosing out-of-synch with the Customer's generator may cause severe damage to Customer equipment and could also pose a serious hazard to Customer or utility personnel. In a few cases there are in-line reclosers away from the substation. In these situations transfer trip is not possible. Additional review by TEP is required in these cases.

7.1 General Technical Requirements

(a) Customer is responsible for obtaining and maintaining all required permits.

(b) Multiple generator connections on the same utility service are permitted; however, a DG Service Disconnect for the facility will be required (normally located at the service entrance section).

(c) In the event that a generator, or aggregate of generators, are of sufficient size to carry the entire (minimum) load of the TEP distribution feeder, or if a generator size and physical location on a feeder is such that it could support an isolated (islanded) section of the feeder, then a transfer trip scheme shall be required at the Customer's expense. If a transfer trip is required, a communication channel and telemetering shall also be required, at the Customer's expense, to facilitate proper parallel operation.. The transfer trip channel may be leased telephone, power line carrier, pilot wire, microwave or other TEP approved medium. The transfer trip equipment will be configured to trip the Customer's generator for loss of the channel signal.

(d) For synchronous generators, the Customer shall ensure that any potential open points such as breakers, fused disconnect switches, etc, located between the generator breaker and utility service are appropriately equipped with either (1) keyed or other suitable mechanical interlocks to prevent them from being inadvertently opened when the generator breaker is closed, or (2) contacts that will instantaneously trip the generator breaker if any such switch were opened while the generator breaker was closed. The intent of the above is to prevent the opening and subsequent (inadvertent) re-closing of such a breaker or switch onto an un-synchronized generator.

(e) Customer shall ensure that the design and installation of electric meter(s) is such that the meter(s) are located on the utility-side of the generator breaker on a normally energized bus.

(f) The Customer is responsible for the design, installation, operation and maintenance of all equipment on the Customer's side of the Point of Interconnection. It is required that the

Customer submit specifications and detailed plans as specified in the Application and Equipment Information Form (see Appendix) for the installation to the utility for review. Review by the utility does not indicate acceptance or approval by the utility or other authorities.

(g) All photovoltaic generators 5kW or less are exempted from this document.

7.2 DG Service Disconnect

The Customer shall install and maintain a DG Service Disconnect in order to isolate all ungrounded conductors of the Customer's generating facility from the utility system.

The DG Service Disconnect will normally be required to be installed at the Customer's electrical service entrance section; however it may be located in the immediate vicinity of the generator, subject to utility approval.

The DG Service Disconnect must be rated for the voltage and current requirements of the generation facility, and must meet all applicable UL, ANSI and IEEE standards. The DG Service Disconnect shall meet the requirements of the National Electric Code (NEC), and shall be properly grounded.

In cases where the DG Service Disconnect is a load break switch, the switch blades, jaws and the air-gap between them shall all be clearly visible when the switch is in the "open" position. It is not acceptable to have any of the "visible open" components obscured by the switch case or an arc-shield, etc. Only switches specifically designed to provide a true "visible open" are acceptable. Such switch shall be installed in a place so as to provide easy and unrestricted accessibility to utility personnel on a 24-hour basis. The utility shall have the right to lock open the switch without notice to the Customer when interconnected operation of the Customer's generating facility with the utility system could adversely affect the utility system or endanger life or property, or upon termination of the Interconnect Agreement. For multi-phase systems, the switch shall be gang-operated.

In cases where the DG Service Disconnect will be installed on a line at a voltage above 500V,TEP may require the customer to install a rack-out breaker, along with a racking tool and grounding device, in lieu of a load break switch. In these cases, the utility will work with the Customer to determine the best option and ensure that the safety requirements are met.

7.3 Dedicated Transformer

Customer generators with a combined total rating of over 10 kW, as measured at the service entrance, may be required to be isolated from other customers fed off the same utility transformer by a dedicated power transformer connecting to the utility distribution feeder. The primary purpose of the dedicated transformer is to ensure that (a) the generator cannot become isolated at the secondary voltage level with a small amount of other-customer load, and (b) the generator does not contribute any significant fault current to other customers' electrical systems. Dedicated transformers also help to confine any voltage fluctuation or harmonics produced by the generator to the Customer's own system. The utility will specify the transformer winding connections and impedance.

7.4 Power Quality

Customer shall ensure that the electrical characteristics of its load and generating equipment will maintain the serving utility's normal power quality requirements. Any deviation from sine wave form or unusual short interval fluctuations in power demand or production shall not be such as to result in impairment of service to other customers or in interference with operation of computer, telephone, television or other communication systems or facilities. Those power quality items will generally include the following:

- Current Imbalance
- Harmonics
- Voltage Flicker
- Power Factor

Exhibit 1 lists, for general informational purposes, TEP's Power Quality requirements which may be updated from time to time. The Customer should verify actual requirements before designing/installing GF.

7.5 Voltage Requirements

Customer generating equipment must deliver at the Point of Interconnection, 60 Hertz, either single or three-phase power at one standard utility voltage as may be selected by the Customer subject to availability at the premises.

7.6 Telemetry

For generators Class III or greater, Customer shall provide to TEP, at Customer's cost, MW and MVAR transducer output quantities for the purpose of control area system load calculations.

7.7 WSCC/NERC Requirements

Customer shall comply with WSCC/NERC generator testing criteria, including but not limited to, the applicable criteria regarding the installation and operation of Power System Stablizers (PSS) and Automatic Voltage Regulators (AVR).

7.8 Labeling Requirements

(a) General Requirements

The Customer shall conform to the NEC for labeling of generation equipment, switches, breakers, etc. TEP will assume the responsibility for labeling any utility owned equipment.

(b) DG Service Disconnect

The Customer shall label the DG Service Disconnect by means of a permanently attached placard with clearly visible and permanent letters 1" high. In addition, the utility may need to attach its own label to the DG Service Disconnect.

(c) Service Entrance

A sign shall be placed at the service entrance indicating type and location of onsite emergency power sources, legally required standby power sources, and onsite optional standby power sources, as defined by the NEC.

The NEC also requires a permanent directory, denoting all electrical power sources on or in the premises, shall be installed at each service equipment location and at locations of all electric power production sources capable of being interconnected. Installations with large numbers of power production sources shall be permitted to be designated by groups.

7.9 Protective Requirements

(a) General Requirements

1. The Customer shall be solely responsible for properly protecting and synchronizing his generator(s) with TEP's system. The Customer is solely responsible for the protection of their equipment from automatic reclosing by the utility.

2. Devices with definite level and timing characteristics (e.g., micro-processor type relays) will be necessary to meet the requirements established herein.

3. Generator classes II and above (>50 kW), must utilitize discreet relays, separate and independent voltage and frequency relays and associated trip paths to the generator breaker (automatic interrupting device). This is to ensure a redundant trip function in the event of a single relay failure or out-of-tolerance condition.
   - The instantaneous/time overcurrent functions can be integrated into a single ground overcurrent relay.
   - The over/under voltage functions can be integrated into a single o/u voltage relay.
   - The over/under frequency functions can be integrated into a single o/u frequency relay.

   Protective relays or microprocessor based devices may be used provided that the required functionality described herein is demonstrated. For generating equipment that is capable of sustained operation above its normal current rating, phase overcurrent tripping shall be required to trip the unit should it exceed this rating.

4. For generator protection schemes that utilize microprocessor based, multi-function relays, one of the following requirements must be met:

   (a) Protective relay failure will not only alarm but will also trip the generator breaker/contactor.

   (b) If relay failure alarms, but does not trip the generator breaker, then additional relaying which meets the requirements stated herein for each class must be provided.

5. With the addition of generation at a Customer site, the ground fault current magnitude might increase to the level where the grounding grid is insufficient to protect personnel from step or touch potentials. Therefore, the Customer is required to ensure the adequacy of the Customer's grounding grid to keep the step and touch potentials at a safe level in the vicinity of equipment accessible by utility personnel or the general public.

6. The Customer shall ensure that the GF protective relaying and controls are adequately protected from electrical surges that may result from lightning, utility switching or electrical faults.

7. Addition of the Customer's GF may require additional control, metering and protective devices at TEP's facilities. The Customer will be responsible for all labor and material costs associated with their installation.

8. Exhibit 2 lists for general informational purposes TEP's relay settings which may be updated from time to time. The Customer should verify with TEP prior to designing/installing a GF

(b) Generator Class Protective Requirements

TEP shall require the following as minimum acceptable protection:

1. **Class I (Single or Three Phase: 50 kW or less)**
   a) The minimum protection required is an under-voltage contactor.

   b) For all synchronous generators and forced commutated inverters, either a manual or automatic synchronizing scheme is required.

2. **Class II (Three Phase: 51-300 kW)**
   a) Protection for overvoltage, undervoltage, overfrequency, and underfrequency is required.

   b) For all synchronous generators and forced commutated inverters, either a manual or automatic synchronizing scheme is required

   c) Phase time and instantaneous overcurrent relays are required.

   d) A ground time and instantaneous overcurrentrelay is required. For installations interconnected to the utility through a transformer with connections that will not supply current to a ground fault on the utility system, a special ground fault detection scheme shall be necessary. The utility will notify Customer of any such requirements after a preliminary review of the Customer's proposed installation.

   e) Other equipment such as supervisory control and alarms, telemetering, transfer trip and associated communications channel may be required in some instances, including but not limited to the following situations: (a) the generator, or an aggregate of generators is large relative to the minimum load on a feeder or sectionalized portion of the feeder, (b) the GF is involved in power transactions requiring the grid, or (c) the GF is remotely controlled by, or dispatched by the utility. The utility will notify Customer of any communications requirements after a preliminary review of the proposed installation.

f) Overload tripping shall be required for any generator capable of sustained operation above its normal current rating

3. **Class III (Three Phase: 301-5,000 kW)**

a) For this class of installation, utility grade protection devices and equipment will be required.

b) Protection for overvoltage, undervoltage, overfrequency, and underfrequency is required.

c) For all synchronous generators and forced commuted inverters, either a manual or automatic synchronizing scheme is required.

d) A ground time and instantaneous overcurrent relay is required. For installations interconnected to the utility through a transformer with connections that will not supply current to a ground fault on the utility system, a special ground fault detection scheme shall be necessary. The utility will notify Customer of any such requirements after a preliminary review of the Customer's proposed installation.

e) Voltage-controlled/restrained time overcurrent relays may be required.

f) A phase sequence voltage relay is required.

g) Other equipment such as supervisory control and alarms, telemetering, transfer trip and associated communications channel may be required in some instances, including but not limited to the following situations: (a) the generator, or an aggregate of generators is large relative to the minimum load on a feeder or sectionalized portion of the feeder, (b) the GF is involved in power transactions requiring the grid, or (c) the GF is remotely controlled by, or dispatched by the utility. The utility will notify Customer of any communications requirements after a preliminary review of the proposed installation.

h) Overload tripping shall be required for any generator capable of sustained operation above its normal current rating

4. **Class IV (Three Phase: Greater than 5,000 kW)**

Note: Induction Generators or Line Commutated Inverters (LCI) in this size range are not anticipated.

a) For this class of installation, utility-grade protective devices and equipment will be required.

b) Protection for overvoltage, undervoltage, overfrequency, and underfrequency is required.

c) For all synchronous generators and forced commutated inverters, either a manual or automatic synchronizing scheme is required.

d) A ground time and instantaneous overcurrent relay is required. For installations interconnected to the utility through a transformer with connections that will not supply current to a ground fault on the utility system, a special ground fault detection scheme shall be necessary. The utility will notify Customer of any such requirements after a preliminary review of the Customer's proposed installation.

e) Voltage-controlled/restrained time overcurrent relay

f) Negative sequence time overcurrent relay

g) Overexcitation relay

h) Loss of excitation relay

i) Phase sequence voltage relay.

j) Other equipment such as supervisory control and alarms, telemetering, transfer trip and associated communications channel may be required in some instances, including but not limited to the following situations: (1) the generator, or an aggregate of generators is large relative to the minimum load on a feeder or sectionalized portion of the feeder, (2) the GF is involved in power transactions requiring the grid, or (3) the GF is remotely controlled by, or dispatched by the utility. The utility will notify Customer of any communications requirements after a preliminary review of the proposed installation.

k) Overload tripping shall be required for any generator capable of sustained operation above its normal current rating.

8. APPLICATION PROCESS AND DOCUMENTATION REQUIREMENTS

8.1 TEP approvals given pursuant to the review and approval process and the Interconnection Agreement shall not be construed as any warranty or representation to Customer or any third party regarding the safety, durability, reliability, performance or fitness of Customer's generation and service facilities, its control or protective device or the design, construction, installation or operation thereof.

8.2 The "Application and Equipment Information Form" (see Appendix) must be completed by the Customer and all supplementary information requested therein must be provided to TEP for review.

Each Customer shall contact and work closely with TEP at all stages of the design to ensure that the project proceeds smoothly. TEP will require a single point of contact, identified in the Interconnection Agreement, with which to coordinate the interconnection process. Exhibit 3 lists for general informational purposes the typical steps required to interconnect a DG with TEP.

8.3 In the event it is necessary for TEP to install facilities on its system (including but not limited to control or protective devices, or any other facilities) in order to accommodate the Customer's generation facility, TEP will install such facilities at the Customer's expense. TEP shall also charge the Customer for any administrative costs and/or the costs of studies required to interconnect the Customer's generation facilities. The payment for TEP's services to prepare estimates, design, procure material, and construct will be arranged in a payment schedule agreed to by both TEP and Customer prior to the start of the project.

8.4 Following TEP's approval of the Customer's proposed interconnection, the Customer cannot remove, alter or otherwise modify or change the equipment specifications, including, without limitation, the operational plans, control and protective devices or settings, and the generating facility system design, type, size or configuration. If the Customer desires to make such changes or modifications, the Customer must revise and resubmit to TEP plans describing the changes or modifications for approval by TEP. No change or modification may be made without the prior written approval of TEP.

9. TESTING AND START-UP REQUIREMENT

9.1 Following TEP's approval of the Customer's interconnection, the Customer shall, at a minimum, have all specified interface equipment, and associated protective devices field tested and calibrated at the time of installation and shall also perform functional trip testing of these relays and associated generator or inverter breaker. Calibration shall include on-site testing of trip setpoints and timing characteristics of the protective functions as required herein. Functional testing, witnessed by TEP personnel, must demonstrate that each protective relay or device function as required herein, upon a (simulated) out-of-tolerance input signal, will trip the generator breaker. Functional testing shall also include a simulated loss of control power to demonstrate that the generator breaker or contactor will open. A trip timing test (simulated loss of voltage) will suffice for static inverters rated 50kW or less.

9.2 The Customer shall provide TEP with a copy of calibration and functional test results. Customer must also notify the utility at least fifteen (15) working days in advance that such tests are to be performed and allow utility personnel to witness such tests and/or conduct additional startup tests if necessary.

9.3 The Customer shall be required to have a signed Interconnect Agreement with TEP, and must provide the utility with a copy of the insurance certificate, as applicable, prior to electrically paralleling the generating facility with the utility system.

9.4 The Customer shall not commence interconnected operation of its generating facility until the installation has been inspected by a TEP authorized representative and final written approval is received from the utility to commence interconnected operation, which approval shall not be unreasonably withheld. The Customer shall give TEP at least fifteen (15) working days notice as to when initial startup is to begin. This notice can run concurrently with 9.2 above, assuming all calibration and functional tests indicate proper operation. Again, TEP will have the right to have a representative present during initial energizing and testing of the Customer's system.

9.5 The Customer shall have all protective devices tested at the time of installation, prior to initial interconnection, and at intervals not to exceed four years. The Customer shall (i) notify the utility as to when such tests are to be performed at least fifteen (15) working days prior to such tests and allow TEP personnel to witness the testing, and (ii) provide TEP with a certified copy of the test results.

10. OPERATIONAL AND MAINTENANCE REQUIREMENTS

10.1 Customer shall be responsible for operating and maintaining the generator facility in accordance with the requirements of all applicable agencies having jurisdiction.

10.2 The Customer shall protect, operate and maintain the generating facility in accordance with those practices and methods, as they are changed from time-to-time, that are commonly used in prudent engineering practice and shall operate and maintain the generating facility lawfully in a safe manner and non-hazardous condition.

10.3 In the event TEP authorized personnel lock open the DG Service Disconnect, the Customer shall not remove or tamper with such lock.

10.4 TEP (including its employees, agents and representatives) shall have the right to enter Customer's premises at any time without notification to Customer to: (a) inspect Customer's GF, protective devices, and to read or test TEP installed equipment and (b) isolate the GF from TEP's system without notice if, in TEP's opinion, a hazardous or emergency condition exists and such immediate action is necessary to protect persons, TEP facilities or other customers' or third parties' property and facilities from damage or interference caused by Customer's GF, or improperly operating protective devices.

Additionally, upon 72 hours notice given to Customer for planned and scheduled maintenance, TEP shall have the right to: (a) maintain or repair TEP equipment, and (b) open the Service Disconnect when a clearance is required by TEP personnel.

10.5 Following the release of a TEP clearance, where it was necessary for the utility to open the DG Service Disconnect, utility personnel will normally leave the disconnect in the open position. It will be the Customer's responsibility to close the disconnect after ensuring that all generation sources that could potentially energize the Customer's side of the disconnect are off, or isolated, so as to eliminate any possibility of paralleling the utility grid with an out-of-sync generator.

However, TEP personnel may, without liability, close the DG Service Disconnect provided that (a) Customer requests, and agrees to allow, TEP to close the disconnect, following the release of a TEP clearance, and (b) TEP personnel can verify that the Customer side of the DG Service Disconnect is not energized.

10.6 Upon termination of the Interconnection Agreement, the Customer shall be responsible for ensuring that the DG Service Disconnect is immediately opened, and that the electric conductors connecting the Customer's generator(s) to the DG Service Disconnect are physically removed, so as to preclude any possibility of inadvertent interconnected operation in the future. TEP reserves the right to inspect the Customer's facility to verify that the generator is appropriately disconnected.

EXHIBIT 1

POWER QUALITY CHARACTERISTICS FOR TUCSON ELECTRIC POWER CO.

SETTING TYPE	TEP
Power Factor [1]	No greater than 0.85 for Class II units and above
Phase Current Imbalance	[3]
Voltage Characteristics	ANSI C84.1
Sine Wave Form	IEEE 519
Harmonics [2]	Voltage: 5% THD, with no single harmonic greater than 3% of the fundamental, IEEE Std. 519-1992, Sect. 10.3 Current: See Table 10.3 of IEEE Std. 519-1992, Sect. 10
Voltage Flicker	IEEE 519, Sect. 10.5[3]

Notes:

[1] This power factor provides for spinning VAR support and minimizes the impact of many small generators on TEP's system voltage stability.

[2] Harmonics limits shall be met for all generation levels from 10 – 100% of each generator's nameplate kVA or kW rating.

[3] Need to consult TEP.

EXHIBIT 2

TUCSON ELECTRIC POWER CO.
RELAY SETTINGS
AND RE-CLOSING PRACTICES

SETTING TYPE	TEP
Over-frequency Time delay [1]	61.1 Hz 0.1 Seconds
Under-frequency Time delay [2]	58.9 Hz 0.1 Seconds
Over-voltage Time Delay	105% 0 Seconds
Under-voltage Time Delay	95% 0 Seconds
Re-closing, first shot [3]	Instantaneous
Re-closing, second shot [3]	15 to 30 Seconds [4]
Re-closing, third shot [3]	165 Seconds

Notes:

[1] Guidelines do not specify a setting or time delay; they state "trip the circuit breaker when the frequency varies from the nominal 60 Hz."

[2] If generator is considered a WSCC generator, the under-frequency setting might be different to comply with WSCC guidelines.

[3] Times are for typical overhead/residential type feeders (not necessarily line reclosers), and are the time delay from the trip to the next reclosure. Actual number of re-close shots on a particular feeder may vary.

[4] Varies based on type of reclosing utilized.

EXHIBIT 3

DG APPLICATION PROCESS

Step 1 – Customer contacts TEP for the Interconnection Requirements, Interconnection Agreement, and applicable tariffs and outlines proposed project. TEP forwards appropriate information to Customer within five (5) working days and provides a TEP Account Manger's name and number should Customer decide to proceed with project.

Step 2 –Customer is encouraged to meet with TEP and discuss the type and size of system, location and proposed operation. A preliminary electrical one-line diagram would be very helpful at this stage. This step will help ensure that TEP is able to determine up-front if any special studies are required, which could then be initiated as early on as possible, and that the applicable interconnection and protective requirements are properly understood and implemented.

Step 3 - TEP will require a retainer to develop conceptual estimates for any interconnection equipment that will be required. After reviewing the conceptual estimates, Customer may proceed with the design and prepare the utility-required information – application form, electrical diagrams, protective relaying and settings, site equipment and layout plans, etc.

Step 4 – Upon completion of the design, the Customer submits the final design package (as specified in the Application Form of the Interconnection Requirements) to TEP for final review and approval. TEP reviews information and informs Customer within fifteen (15) working days of receipt as to sufficiency of information and whether any information is missing. In the event of incomplete information, Customer will re-submit the final design package and Step 4 will be re-initiated.

Step 5 – Upon receipt of completed and sufficient application information, TEP reviews the application for conformance to the interconnection requirements within thirty (30) working days, unless other timeframes are mutually agreed upon. TEP will respond to Customer within this time as to whether the submitted design information complies with the interconnection requirements or if there are any issues in non-compliance. (In the event of non-compliance, Customer will re-submit corrected information and Step 5 will be re-initiated). In addition, TEP will provide an invoice for the interconnection project cost, and a timeline for the project completion.

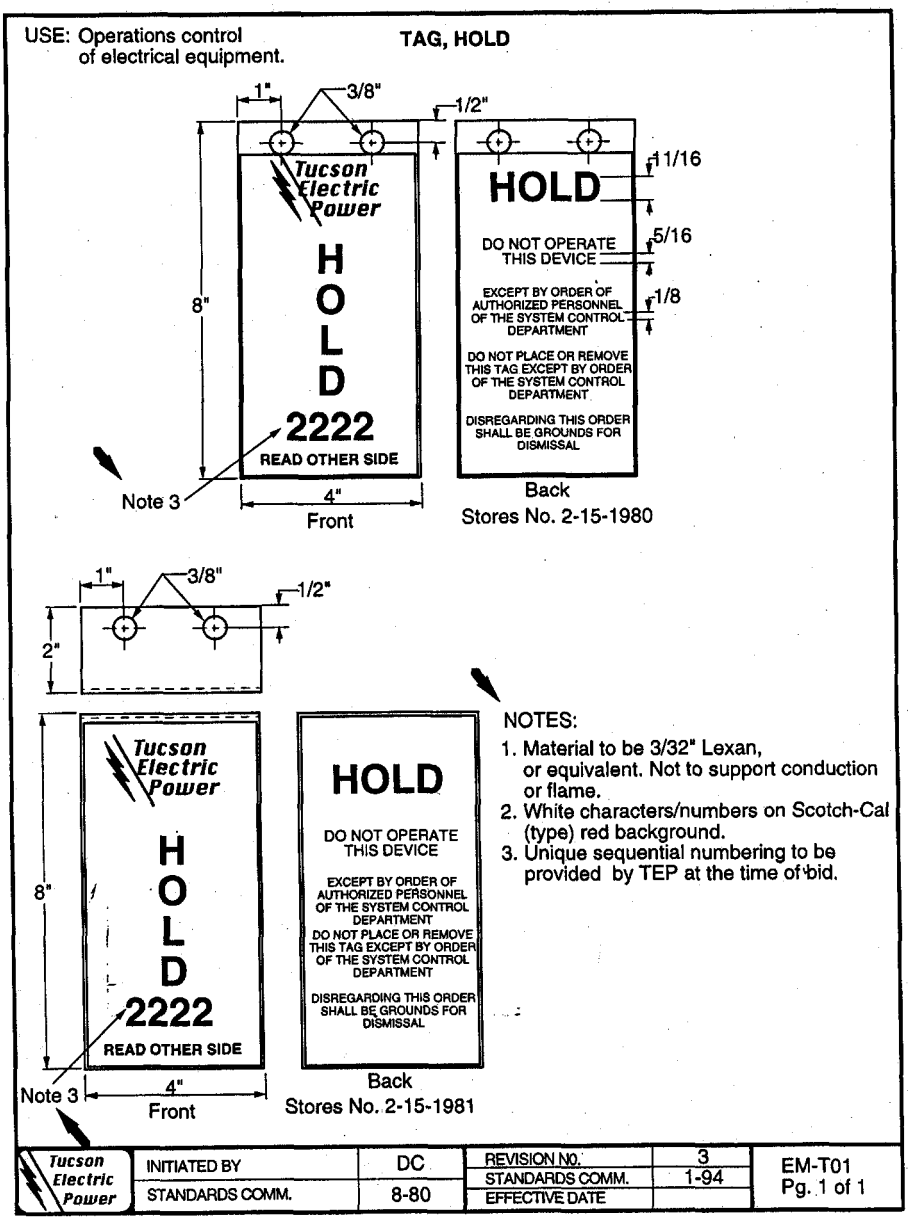
Step 6 – Upon completion of the signed Interconnection Agreements, and receipt of payment, TEP will order material and schedule construction for the interconnection project and will provide customer with an estimated startup date.

Step 7 – Following construction/installation of the facility, Customer will provide TEP with at least fifteen (15) working days notice as to when the utility can perform an on-site inspection and when the protective device tests, as applicable, are to be performed so that TEP may witness and/or review them.

Step 8 – Upon satisfactory completion of the site inspection, protective relay testing, and operating procedure, TEP notifies Customer in writing that the facility may be operated in parallel with the utility grid per the agreed terms and conditions.

EXHIBIT 4

TEP HOLD TAG



Tucson Electric Power					
	INITIATED BY	DC	REVISION NO.	3	EM-T01 Pg. 1 of 1
	STANDARDS COMM.	8-80	STANDARDS COMM.	1-94	
			EFFECTIVE DATE		

APPENDIX

Tucson Electric Power Company

APPLICATION AND EQUIPMENT INFORMATION FORM

SITE AND CUSTOMER INFORMATION
(Complete all items)

Customer Name _____ Telephone _____

Company Name (if applicable)_____

Mailing Address_____

Generating Facility Address _____

Project Contact_____ Telephone_____

Utility Account Number _____ Electric Meter No. _____

ESP (if different from serving utility) _____

MSP (if different from serving utility) _____

Completed By _____ Telephone_____

PROPOSED OPERATION
(Answer all questions)

A. Does the Generation Facility plan on being a net exporter of energy into the utility grid? (Yes or No)_____. If "Yes", explain the proposed operation and estimated power to be exported, and also provide name of proposed purchaser of this power:

_____

_____

B. If the Generating Facility will be used only for on-site power, will it be operated as a peak-shaving unit during utility peak load conditions, or as a base-loaded unit operating 24 hrs a day?

_____

GENERATOR INFORMATION

(Complete for each rotating generator only)

A. Manufacturer _____

B. Type (Synchronous, Induction, D.C.) _____

C. Nameplate rating
Voltage _____ kW _____
Power Factor _____ Frequency _____
Model No. _____ Single or Three Phase _____

D. Type of Excitation System (Self or Separate) _____

E. Generator Electrical Characteristics (on the machine base, for Class II and above)

Synchronous Reactance (X'd) _____
Transient Reactance (X'd) _____
Subtransient Reactance (X"d) _____
Zero sequence reactance (XO) _____
Negative sequence reactance (X2) _____

PRIME MOVER

(Complete for rotating machinery only)

A. Manufacturer _____
B. Manufacturer's Reference Number _____
C. Energy Source (Natural Gas, Steam, etc.) _____

INTERFACE EQUIPMENT

(Complete for each rotating generator only)

A. Synchronizer for Synchronous Generator:
Manufacturer _____
Manufacturer's Model Number _____
Automatic or Manual Synchronizer _____

B. Inverter for DC generator:
Manufacturer _____
Manufacturer's Model Number _____
Line or Self Commutated Inverter _____

STATIC INVERTER
(Complete for DC to AC Inverters only)

A. Manufacturer _____ Model No. _____
B. Terminal Voltage _____ Single, Split or Three Phase _____
C. Nameplate kW _____ No. of Units _____
D. Frequency _____ Power Factor _____
E. Line or Self Commutated _____ Battery Back Up (Y/N)? _____
F. Total System kW Output _____
G. Energy or Fuel Source _____

PROTECTION EQUIPMENT
(Complete all applicable items, attach a separate sheet if necessary)

A. Manufacturer's Name for each Protective Device

_____
_____

B. Manufacturer's Model Number for each Protective Device

_____
_____

C. Range of Available Settings for each Protective Device

_____
_____

D. Proposed Settings (trip setpoint and time) for each Protective Device

_____
_____

E. Ratios of associated current transformer. If multi-ratio, state the available ratios and which ratio will be used

_____
_____

F. Describe operation for tripping of the interface or generator circuit breaker for the following occurrences:

1. Utility outage _____

_____
_____

2. Utility short circuit (three phase and single phase to ground)

_____
_____

SUPPLEMENTARY INFORMATION

(Information below to be submitted for all projects. All diagrams are to be professionally and neatly drawn. Generally, free hand drawn or illegible diagrams will not be accepted by utility).

A. Electrical One-Line Diagram:

Provide 5 sets, including any and all revisions or changes as they are made. Diagram(s) must also include project name and address, show generator size and all protective relaying and control equipment, as well as electric service entrance and utility meter.

B. Electrical Three-Line Diagram:

Provide 5 sets, including any and all revisions or changes as they are made. Diagram(s) must also include project name and address, show generator size and all protective relaying and control equipment, as well as electric service entrance and utility meter, and include all neutral and ground conductors and connections.

C. AC & DC Control Schematics:

Provide 5 sets, including any and all revisions or changes as they are made, for all projects comprising rotating machinery. Diagrams must show the detailed wiring of all protective relays and control functions, and include control power source and wiring.

D. Detailed Map:

Provide 5 sets of detailed maps, including any and all revisions or changes as they are made. Maps should show major cross streets and proposed plant location, and include the street address.

E. Site Plan:

Provide 5 sets of site plans, including any and all revisions as they are made, showing the arrangement of the major equipment, including the electric service entrance section and utility meter, location of generator and interface equipment, and location of the Disconnect Switch. Include the street address, and location of the any lock-boxes, etc.

F. Testing Company:

Provide the name of the company that will do the protective relay bench testing and the trip circuit functional tests and the anticipated start up date.

G. Point of Contact

If the interconnection and start-up process is to be coordinated through a party or individual other than the Customer, provide the name, company, address and phone number of that individual or party with whom the utility is to coordinate the interconnection.